PHILIP MORRIS INCORPORATED

LAW DEPARTMENT MEMORANDUM

RICHMOND, VIRGINIA

TO: J. Seeman DATE: 29 October 1979

FROM: S. Hutcheson

SUBJECT: PM 703 SEARCH RESULTS: AMINE AND OLEFIN RELEASE COMPOSITIONS

Per your request, I have attempted to prepare comments on each of the references Mr. Depaoli provided at our recent meeting. He has indicated that there are no other references that need to be considered at this time.

COMMENTS

1) U.S. Patent 1,941,416 to Pettersson describes smoking products containing acridinium salts such as 3,6-diamino-10-methyl acridinium chloride, ethoxy-diaminoacridinium hydrochloride or orthoxychinolin potassium sulfate. The salts are said to counteract or neutralize the undesirable properties of smoke which cause irritation of the mucous membranes.

Apparently the compounds suggested do not contribute flavor to the smoke, and moreover, I don't believe that the structure shown would release either an alcohol or amine. (See attachments.) Please verify this.
(SAX - see Jeff's memos)

2) French Patent 1,583,052 to Pomot describes the use of surface active and cationic compounds in smoking products to reduce "tarry" substances in the smoke. The compounds disclosed have one or more nitrogen atoms carrying a positive charge and enough carbon atoms to render the molecule fat-soluble.

Compounds suggested are as follows:

a) Primary fatty amines of the formula:

$$R\text{-}NH_2$$

where R = saturated or unsaturated acyclic hydrocarbons containing 10-22 carbon atoms;

b) Primary, β-amines of the formula:

$$R^1\text{-}CH_2(CH_3)\text{-}NH_2$$

where R^1 is an acylic hydrocarbon of 7-13 carbon atoms;

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c) Primary amines of the formula:

$$R^2\text{-}NH_2$$

where R^2 is an acyclic hydrocarbon containing one or more heterogeneous groups such as ether groups, ester groups, etc. (see specification for details);

d) Imidazolines;

e) Secondary-primary amines; and

f) Quaternary ammonium salts (see specification).

Note that all of the quaternary ammonium salts have a saturated or unsaturated hydrocarbon of 10 to 22 carbon atoms so that the "cationic" part is fat soluble. We may be able to distinguish your compounds over Pomot's by virtue of their structure and specifically by claiming only lower alkyl substituents of perhaps 1-5 carbon atoms. Experimental work to demonstrate that your compounds do **not** substantially effect tar delivery would be advisable and may even be required by the examiner during the prosecution of the application.

3) U.S. Patent 2,460,284 to Hale discloses the use of solubilized chlorophyll in tobacco at between 0.1 to 3% by weight of the tobacco to effect fuller oxidation of less volatile distillates generated during smoking. The chlorophyll serves to reduce unpleasant taste and odor resulting from appreciable quantities of amino acids produced in burning tobacco. All nicotine analogues, phenolics and the like are more completely combusted, according to the inventor.

4) U.S. Patent 1,842,266 to Hicks describes the use of dessicated yeast in smoking products. On smoking, Vitamin B derived from the yeast is absorbed by the smoker thereby alleviating the harmful "side actions" of tobacco. The inventor indicates that the yeast-treated tobacco burns with greater heat and there is more complete combustion. The presence is yeast is said to cause the tobacco to self extinguish when active smoking is terminated.

I'm sure George would appreciate any comments we have regarding the art. I do not think that the prior disclosure of yeast or chlorophyll in tobacco is going to be of any concern. However, I would appreciate some comments from you.

ch
Attachments
cc: T. Osdene
W. Johnson

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